

What is claimed is:

- 1 1. An umbrella apparatus comprising:  
2 a base support portion;  
3 a pole portion coupled to the base support portion;  
4 a canopy portion hingedly coupled to the pole portion;  
5 a rechargeable electrical power system for providing electrical power to the  
6 umbrella apparatus; and  
7 a solar energy system carried by the pole portion above the canopy portion, the  
8 solar energy system being adapted to collect solar energy and convert the solar energy  
9 into electrical energy, the solar energy system being conductively coupled to the  
10 rechargeable electrical power system, such that the solar energy collected and  
11 converted into electrical energy recharges the rechargeable electrical power system.
- 1 2. The umbrella apparatus according to claim 1, wherein the rechargeable electrical  
2 power system and the solar energy system are both carried by a housing mounted on  
3 the pole portion above the canopy portion.
- 1 3. The umbrella apparatus according to claim 1, wherein the rechargeable electrical  
2 power system is carried by the base support portion and the solar energy system is  
3 carried by a housing mounted on the pole portion above the canopy portion.
- 1 4. The umbrella apparatus according to claim 1, wherein the rechargeable electrical  
2 power system is powered by at least one rechargeable battery.

- 1 5. The umbrella apparatus according to claim 1, further comprising:  
2 an electrical charging system for recharging the rechargeable electrical power  
3 system, the electrical charging system being adapted to receive power from an AC  
4 power outlet.
- 1 6. The umbrella apparatus according to claim 1, further comprising:  
2 a lighting system carried by the canopy portion, the lighting system being

3 conductively coupled to and powered by the rechargeable electrical power system.

1 7. The umbrella apparatus according to claim 6, wherein the lighting system  
2 comprises:

3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of cold cathode tube elements carried by the rib members, each cold  
5 cathode tube element being conductively coupled to and powered by the rechargeable  
6 electrical power source.

1 8. The umbrella apparatus according to claim 6, wherein the lighting system  
2 comprises:

3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of light emitting diode elements carried by the rib members, each light  
5 emitting diode element being conductively coupled to and powered by the rechargeable  
6 electrical power source.

1 9. The umbrella apparatus according to claim 6, wherein the lighting system  
2 comprises:

3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of fluorescent light elements carried by the rib members, each  
5 fluorescent light element being conductively coupled to and powered by the  
6 rechargeable electrical power source.

1 10. The umbrella apparatus according to claim 1, further comprising:

2 an electromechanical opening and closing system for opening and closing the  
3 canopy portion, the electromechanical opening and closing system being conductively  
4 coupled to and powered by the rechargeable electrical power system.

1 11. The umbrella apparatus according to claim 10, wherein the electromechanical  
2 opening and closing system comprises:

3 an electric motor carried by the pole portion;

4 a control system for controlling the electric motor;  
5 a gear system coupled to the electric motor; and  
6 a cable and pulley system coupled to the gear system and the canopy portion;  
7 wherein the opening and closing of the canopy portion is achieved by the electric  
8 motor in response to selective operation of the control system.

1 12. The umbrella apparatus according to claim 11, wherein the control system  
2 comprises:

3 a receiver conductively coupled to the electric motor;  
4 a remote transmitter for transmitting an encoded signal to the receiver; and  
5 a decoder conductively coupled to the receiver for decoding the encoded signal  
6 fro the transmitter.

1 13. The umbrella apparatus according to claim 1, further comprising:  
2 a cooling system carried by the canopy portion, the cooling system being  
3 conductively coupled to and powered by the rechargeable electrical power system.

1 14. The umbrella apparatus according to claim 13, wherein the cooling system  
2 comprises:  
3 at least one electric fan coupled to the canopy portion, each electric fan being  
4 conductively coupled to and powered by the rechargeable electrical power system.

1 15. The umbrella apparatus according to claim 13, wherein the cooling system  
2 comprises:

3 a fluid reservoir operably associated with the umbrella apparatus;  
4 at least one mist nozzle coupled to the canopy portion, each mist nozzle being in  
5 fluid communication with the fluid;  
6 a conduit creating fluid communication between the fluid reservoir and each mist  
7 nozzle; and  
8 a pump for pumping the fluid from the reservoir through each mist nozzle.

10  
1 16. An umbrella apparatus comprising:  
2 a base support portion;  
3 a pole portion coupled to the base support portion;  
4 a canopy portion hingedly coupled to the pole portion;  
5 a rechargeable electrical power system for providing electrical power to the  
6 umbrella apparatus;  
7 a solar energy system carried by the pole portion above the canopy portion, the  
8 solar energy system being adapted to collect solar energy and convert the solar energy  
9 into electrical energy, the solar energy system being conductively coupled to the  
10 rechargeable electrical power system, such that the solar energy collected and  
11 converted into electrical energy recharges the rechargeable electrical power system;  
12 and  
13 a combination of two or more of the following modular systems:  
14 a lighting system carried by the canopy portion;  
15 an electromechanical opening and closing system for opening and closing  
16 the canopy portion; or  
17 a cooling system;  
18 wherein each modular system is configured to be interchanged with each  
19 other, each modular system being conductively coupled to and powered by the  
20 rechargeable electrical power system.

11  
1 17. The umbrella apparatus according to claim 16, wherein the lighting system  
2 comprises:  
3 a plurality of rib members coupled to the canopy portion; and  
4 a plurality of cold cathode tube elements carried by the rib members, each cold  
5 cathode tube element being conductively coupled to and powered by the rechargeable  
6 electrical power source.

12  
1 18. The umbrella apparatus according to claim 16, wherein the lighting system  
2 comprises:  
3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of light emitting diode elements carried by the rib members, each light  
5 emitting diode element being conductively coupled to and powered by the rechargeable  
6 electrical power source.

1 <sup>13</sup>19. The umbrella apparatus according to claim <sup>10</sup>18, wherein the cooling system  
2 comprises:

3 a fluid reservoir operably associated with the umbrella apparatus;  
4 at least one mist nozzle coupled to the canopy portion, each mist nozzle being in  
5 fluid communication with the fluid;  
6 a conduit creating fluid communication between the fluid reservoir and each mist  
7 nozzle; and  
8 a pump for pumping the fluid from the reservoir through each mist nozzle.

1 <sup>14</sup>20. The umbrella apparatus according to claim <sup>10</sup>18, wherein the electromechanical  
2 opening and closing system comprises:

3 an electric motor carried by the pole portion;  
4 a control system for controlling the electric motor;  
5 a gear system coupled to the electric motor; and  
6 a cable and pulley system coupled to the gear system and the canopy portion;  
7 wherein the opening and closing of the canopy portion is achieved by the electric  
8 motor in response to selective operation of the control system.